Colloid Carcinoma Arising in Chronic Anal Fistula

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• **Mucinous carcinoma arising in chronic anal fistula is a rare but grave complication. Some sixty-five cases are reported in the literature. One additional case in a fistula of 47 years' duration is herein reported. The neoplastic glandular epithelium may arise from the rudimentary anal ducts or the bowel mucosa. Direct invasion occurs along the fistulous tract or adjacent tissues. Numerous cystic cavities filled with mucus are formed in the center of the process while an inflammatory reaction of the host tissue is provoked at the periphery. Hence biopsy material from the center of the process is more likely to be accurate than material from the periphery.**

Malignant degeneration in a chronic anal fistula should be progressively suspected under the following conditions: Excessive induration, recurrent postoperative induration, the discharge of mucus from a tract and the findings of mucus-filled cystic cavities at surgical excision.

THE DEVELOPMENT of colloid or mucinous carcinoma in anal fistula of long standing is rare. Sixty-five cases have been reported in the literature. The presentation of another case arising in an anal fistula that had been present for 47 years will serve to draw attention again to this grave complication.

Rosser[5] directed interest to the relation of anal fistula to cancer of the anal canal in 1934. Skir,[7] in 1948, collected reports of 50 cases in the literature in which malignant change developed in anal fistula. He was not able to state that in all cases there had been malignant degeneration of benign fistula, but in at least 14 there was a history of chronic fistula of more than ten year's duration, which would seem to exclude antecedent malignant disease. Skir reported, in addition, three cases he had observed in which carcinomatous changes of the colloid or mucinous type developed in fistulas of 10, 30 and 55 years' duration. Two of the patients were negroes. Hill and Smith,[2] also in 1948, wrote of colloid carcinoma involving the perianal region, rectum and sigmoid colon. They reported three cases that occurred in anal fistulas. McIntyre,[4] in 1952, reported four cases of carcinoma associated with fistula. Three were adenocarcinoma, a fourth was squamous cell carcinoma. Le Blanc and Thompson,[3] in 1952, reported two cases of mucinous carcinoma developing in fistulas, one four years and the other two years after the original fistulectomy. In the same year Stockman and Young[8] collected reports of a total of 64 cases in the literature and added a report of one case.

It is probable that the origin of the neoplastic glandular epithelium is within the rudimentary anal ducts or within the bowel mucosa itself. Epithelialization by normal epithelium of fistulous tracts has been repeatedly observed, and Rundle and Hales[6] in discussing the pathologic observations made at operation in one case stated that the neoplasm seemed to grow along the fistulous tract from near the primary opening. Direct infiltration of adjacent tissues by malignant cells with secretion of a mucinous material from the glandular acini occurs. Cystic cavities filled with colloid material may be formed by these slowly growing cancers.

Trimpi and Bacon[9] said that the mucin may be intracellular or extracellular and that the production of mucus may influence the development of the tumor in several ways. Expansion within the tissue spaces, causing stripping up of surrounding tissue fibers by mechanical pressure, may occur. This leads to invasion of venous and lymphatic channels, permitting early local metastasis. Conversely, the accumulation of mucus under pressure in well-formed acini may interfere with cell nourishment or cause tissue necrosis of the cancer, accounting for late metastasis of the lower grade tumors. The host tissues undergo an inflammatory response as a result of the carcinomatous invasion or attendant secondary infection from the bowel. Binkley and Quan[1] described this clinicopathologic phenomenon as "pseudoinflammatory colloid carcinoma of the rectum." They reported six cases, some with fistulous tracts, but did not speculate as to which was the primary disease, the fistula or the carcinoma. They emphasized the characteristics of induration stricture formation, slow rate of growth, little pus formation and the discharge of gelatinous material from fistulous openings. The paucity of biopsy specimens containing cancer cells was typical in the six cases they described. Most of the many biopsied tissues were reported nonmalignant and inflammatory in reaction. This inflammatory reaction may effectively mask the true identity of the disease, keeping the diagnosis in doubt, and the patient's life in jeopardy.

This fact was graphically pointed up by Mc-

Submitted February 29, 1956.

Intyre's[4] series in which biopsy under local anesthesia in three cases revealed only inflammatory reaction in two and nonspecific granuloma in one. Repeat biopsies in the three cases, under spinal anesthesia, were confirmatory of adenocarcinoma in two and of squamous cell carcinoma in one. In a fourth case adenocarcinoma was diagnosed two and a half years after fistulectomy and complete healing. Adenocarcinoma had developed within the scar. Hill and Smith[2] also observed that colloid carcinoma invaded directly into surrounding tissue and that biopsy from the margin may show only inflammatory reaction of the host tissue. These observations closely parallel conditions in the case to be reported below.

REPORT OF A CASE

An 83-year-old white man, a retired railroad switchman, was admitted to the proctologic service of the San Diego County General Hospital, in April 1950. The chief complaint was of the presence of multiple draining sinuses about the perianal region. Upon inquiry he said that he had had the same disorder since 1903 and he had been subjected to numerous surgical procedures and local treatments without success.

Proctoscopic examination of the lower 18 cm. was done and the bowel was observed to be normal. There were multiple fistulous openings over both posterior buttocks, and all were intercommunicating. The primary opening of the fistulous process was at the dentate margin posteriorly. Barium enema studies and x-ray films of the sacrum and coccyx disclosed no involvement. An x-ray film of the chest was normal. Smears and culture of the exudate showed no tubercle bacilli, amebae or pathogenic fungi. A Frei test was negative for venereal lymphogranuloma. The blood sugar content was 122 mg. per 100 cc. No abnormalities were noted in routine examination of the blood and urine and the result of a serologic test for syphilis was negative.

In May 1950 with the patient under spinal anesthesia, fistulectomy was performed with wide debridement. Innumerable ramifications of the tracts were present and in some areas cystic cavities filled with a gelatinous clear material were evident. Biopsy specimens were excised from six areas. All were reported as showing chronic inflammatory change. The subsequent course of the patient was satisfactory and he was dismissed to the outpatient clinic.

In January 1951 he was readmitted to the hospital because the operative wound had not healed satisfactorily and several areas of induration and of evident abnormal growth had developed. Biopsy specimens were taken from several sites and colloid carcinoma of slowly growing type was reported.

Microscopic examination. The sections from one piece of tissue showed a stratified squamous epithelial lining and, in the underlying tissues, an adenoid tissue characterized by a polypoid hyperplasia where the glands were forming large quantities of mucus. The lining cells were tall, columnar and appeared fairly uniform. Sections from a second portion showed a delicate structure of dendritic processes where the epithelium had been lost. These dendroids appeared to be floating in a sea of mucus in which there were a few desquamated cells and many polymorphonuclear leukocytes.

In February 1951, palliative colostomy was done and, because of massive involvement of buttocks and perineum, no attempt was made to remove the disease. The patient regained 15 pounds of weight but died in August of extensive infiltration of the buttocks, perineum and rectal walls.

COMMENT

The possibility of carcinomatous change in anorectal fistulas of long standing should be more widely recognized. Suspected areas are those which show undue induration; induration that does not subside following surgical excision or induration that develops after an apparent satisfactory convalescence. The discharge of mucoid material from the tracts or the detection of small cystic cavities filled with mucus communicating with a fistulous tract is nearly pathognomonic of colloid carcinoma. Since the process is infiltrative into the buttocks and perineum with a circumscribed zone of inflammatory reaction, numerous biopsy specimens must be taken from the center of the indurated area and not in the inflammatory peripheral zone.

While many anorectal disorders can be borne with fortitude without serious impairment of health, the correction of anal fistula should be urged upon the patient in order to avoid this rare but grave complication.

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